Code 923 Biospheric Sciences Branch Highlights for Nov. - Dec. 2002

** GLOBE Soil Investigation team receives award

Dr. Elissa Levine and the GLOBE Soil Investigation team (Code 923) have been selected to receive an award for "developing an excellent web site for Soil Science education" by the American Society of Agronomy Extension Education Program. The web site (http://ltpwww.gsfc.nasa.gov/globe/index.htm) is an educational resource for teachers, students and the general public for understanding basic concepts about soils and their role in the Earth System.

** Nelson (Code 923) presents at several seminars and a remote sensing short course

Ross Nelson (Code 923) has been participating in numerous public outreach and education endeavors. On September 30, he gave a presentation to the US Forest Service inventory group at the Northeastern Forest Experiment Station in Newtown Square, PA. On October 17, he gave the same presentation to a forestry seminar at Virginia Tech. The talk was entitled "Multi-Resource Inventory of Delaware Using an Airborne Laser System", which details the results of a statewide forest inventory, impervious surface area assessment, open water assessment, and wildlife habitat measurement of the state using a helicopter-mounted, GSFC-built laser profiler.

He also taught a week-long remote sensing short course to US Fish and Wildlife and National Park Service personnel from refuges and parks throughout the country. Ross Nelson and Mike Story (NPS - Remote Sensing coordinator) taught the course to 18 students at the National Conservation Training Center in Shepardstown, WV, October 28 - November 1. Jim Irons (923/Acting Branch Head), Dave Herring (chairman, ESD Outreach Committee), and Dave Harding (921) gave well-received 1 hour presentations at this short course. Jim talked on Landsat 7, Dave Herring on EOS, and Dave Harding on airborne laser altimetry..

** Code 923 members brief National Institute of Justice

Three 923 members gave briefings at a full day NASA/National Institute of Justice (NIJ) Collaboration Meeting held at GSFC on 11/13/02. The meeting focused on NASA projects and technologies that could be adopted by NIJ for Homeland Security applications. Dr. Steve Ungar (Code 923) described the capabilities of the EO-1 sensors, Dr. Betsy Middleton (Code 923) showed preliminary results of fluorescence measurements of TNT-treated vegetation, and Dr. Marc Imhoff (Code 923) described the BioSAR system for its ability to penetrate forest canopies.

**** Proposed deep space and lunar calibration maneuver review**

A review of the proposed deep space and lunar calibration maneuver was conducted on December 12, 2002. The review was requested of NASA HQ Code Q by Code Y as another step in the long process towards accomplishing the maneuver. Briefings on science, operations and spacecraft were made by Jon Ranson, Terra Project Scientist (Code 923), Bob Kozon, Terra Flight Operations Director, and Dick Quinn, Lockheed Martin Chief AM-1 Engineer, respectively. Panel Chair Michael Greenfield will submit a report on the panel findings in early January. When given the go ahead by Code Y, Terra Science and Operations personnel are ready to make final preparations and conduct the maneuver in April 2003.

**** Landsat ETM+/TM Radiometric Calibration Workshop (B. Markham/923)**

The Landsat-7 ETM+ and Landsat-5 TM calibration working group meetings were hosted on December 11-12, 2002 by the Optical Sciences Center at the University of Arizona. Dr. Kurt Thome of the Optical Sciences Center is an investigator working on the calibration of the reflective bands of the Landsat sensors. These working groups meet twice yearly to discuss recent Landsat-7 and Landsat-5 calibration results and recommend changes to the radiometric calibration parameters and procedures for the current and historical data sets. Updated calibration results presented at this meeting continue to show that the Landsat-7 ETM+ instrument is radiometrically stable, and continues to show no statistically significant trends in radiometric gain since launch in any of the spectral bands. The confidence intervals for the trends limit the maximum change that may be occurring to less than 1% per year. Additional Landsat-5 TM thermal band calibration results continue to show a deviation from ground based measurements of about 2% and some possible trends with time. EDC expects to implement the calibration groups recommended changes to the Landsat-5 TM calibration by March of 2003. No changes were recommended for the Landsat-7 ETM+ radiometric calibration.